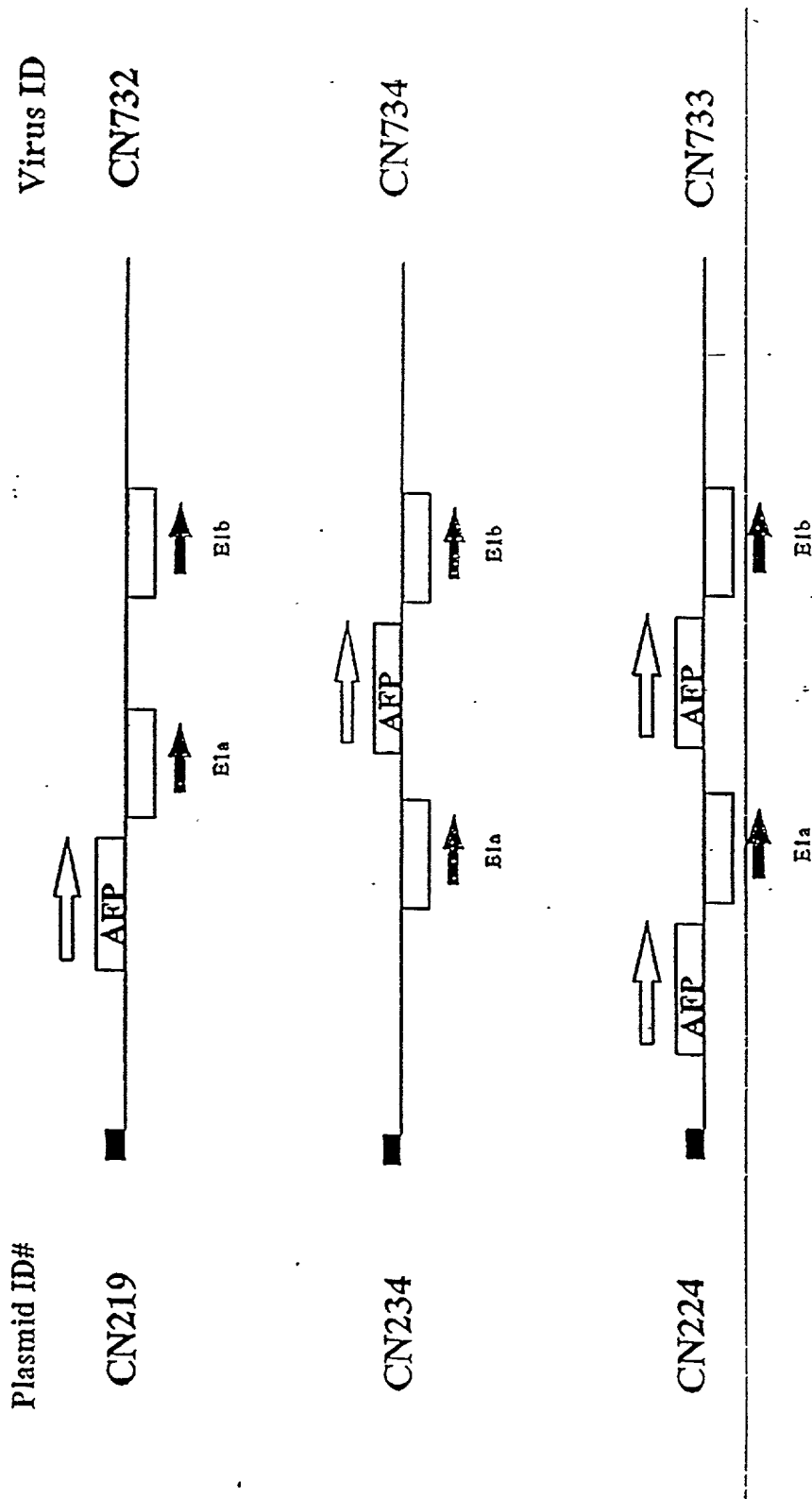
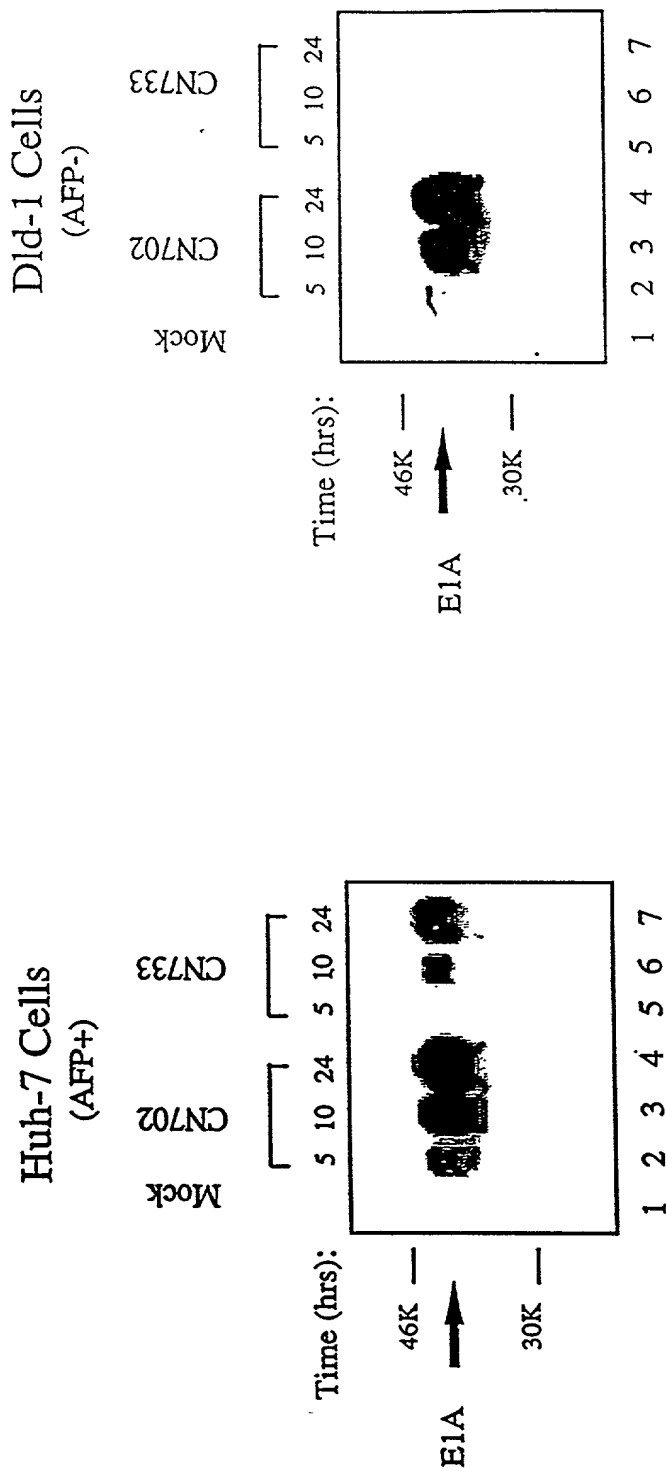


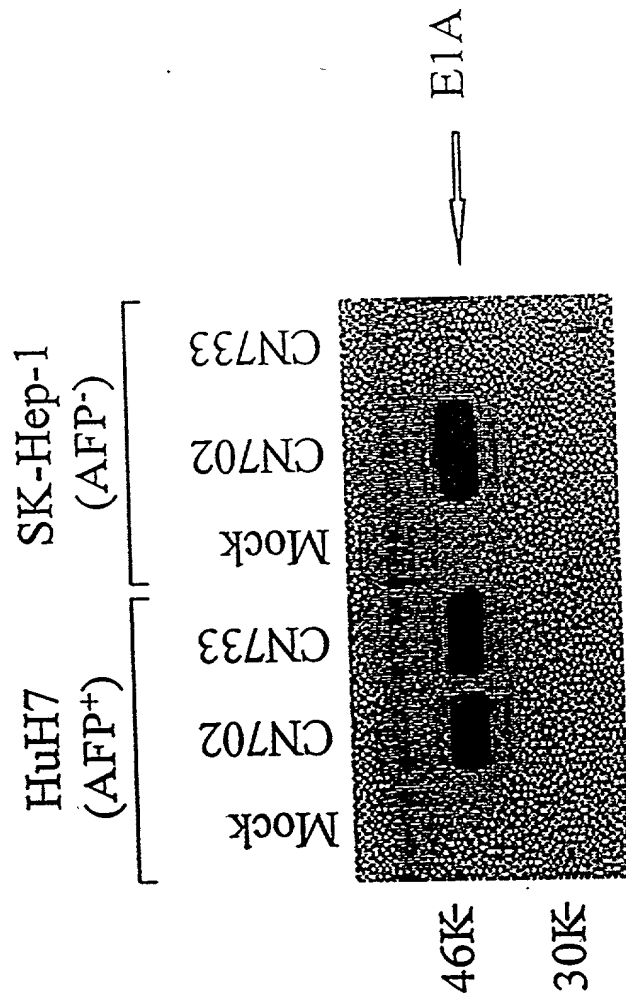
# FIGURE 1

## AFP E1a and E1b Adenovirus Constructs



[illegible]

**FIGURE 2B**



**FIGURE 3A**

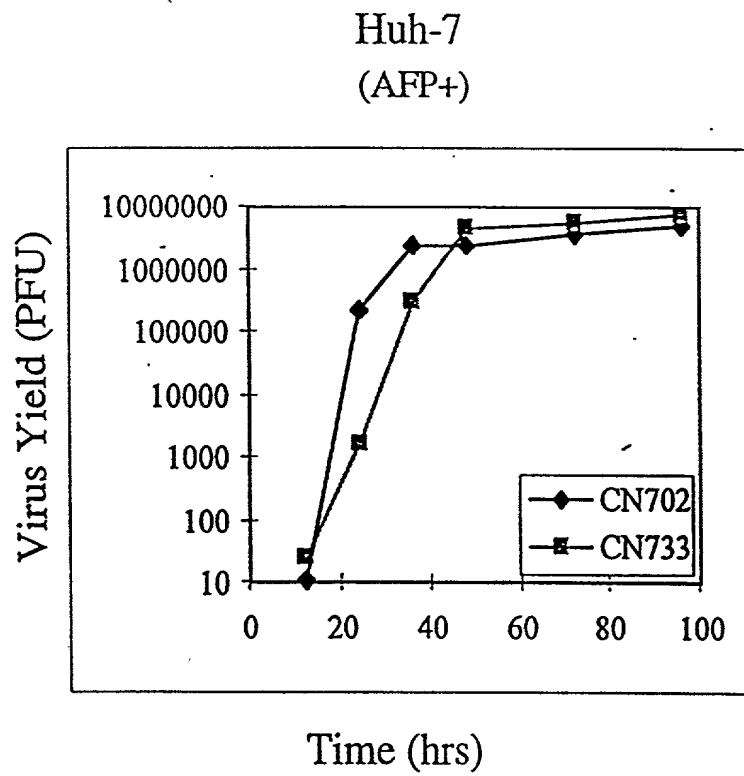


FIGURE 3B

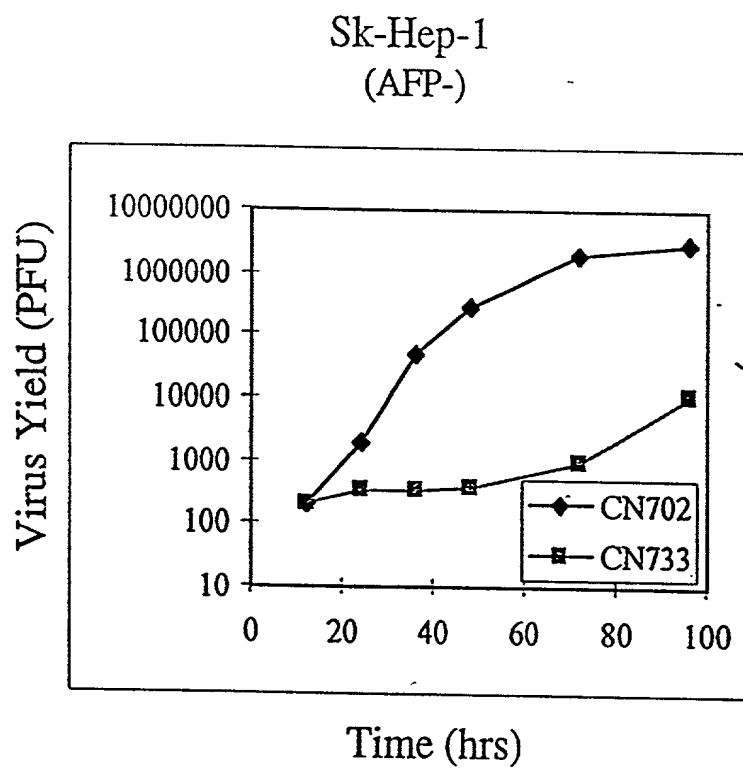


FIGURE 3C

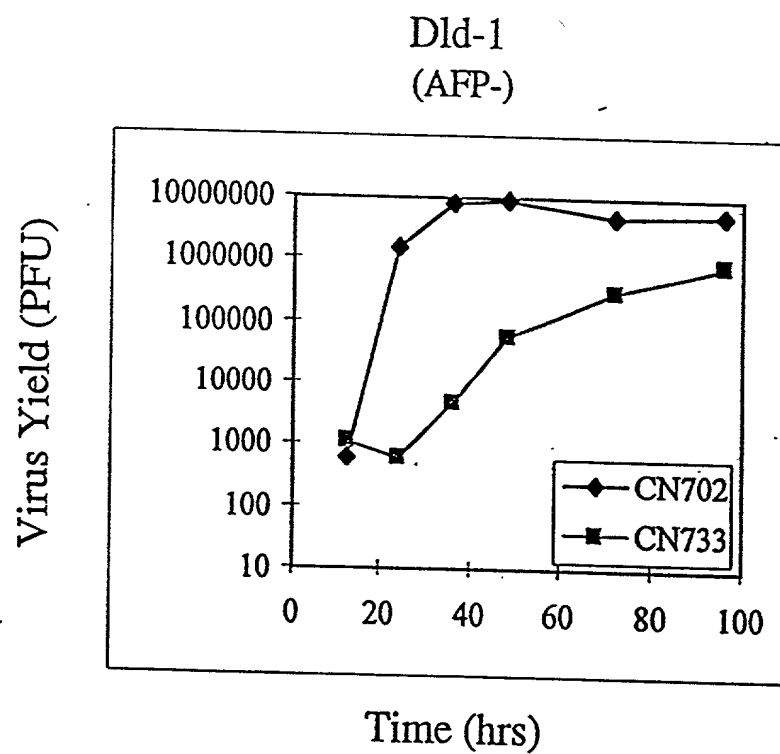


FIGURE 4A

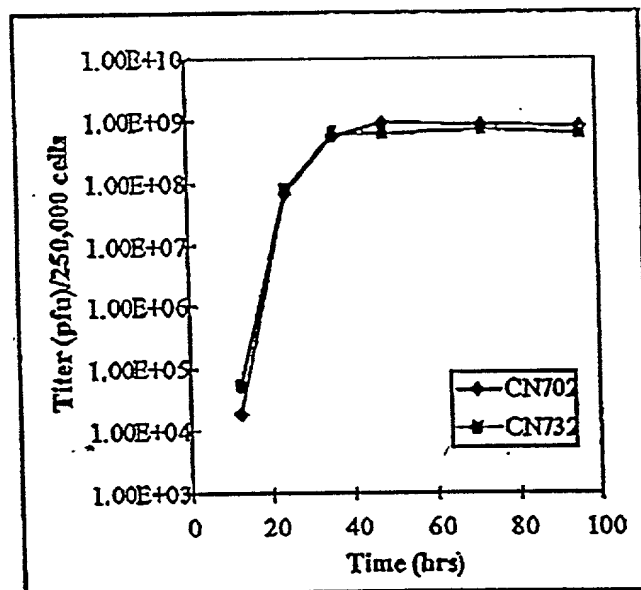


FIGURE 4B

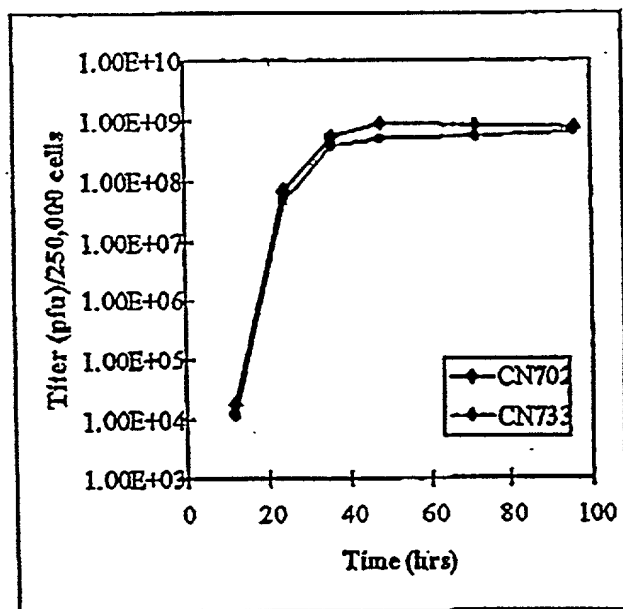




FIGURE 4C

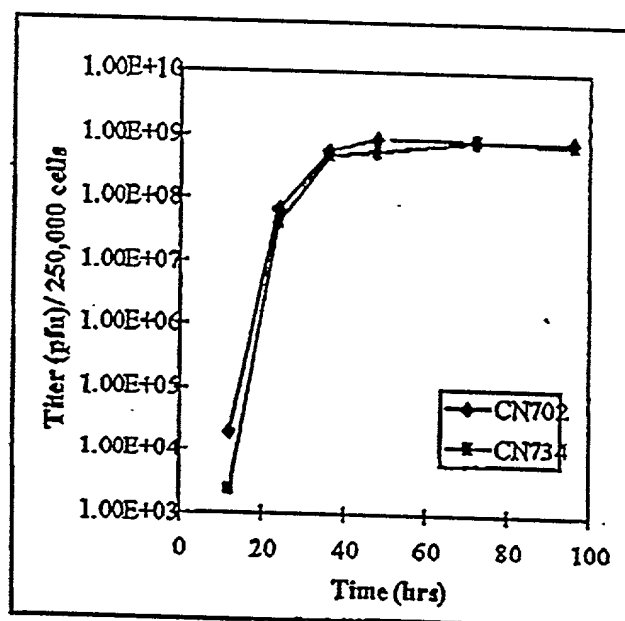


FIGURE 5A

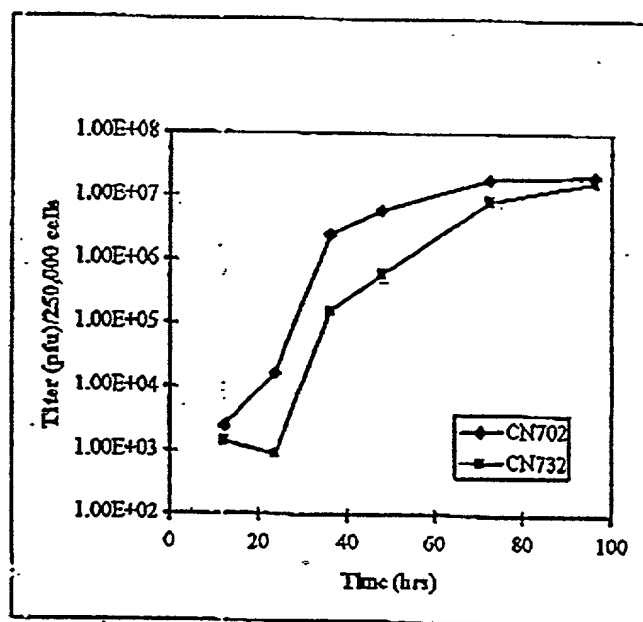


FIGURE 5B

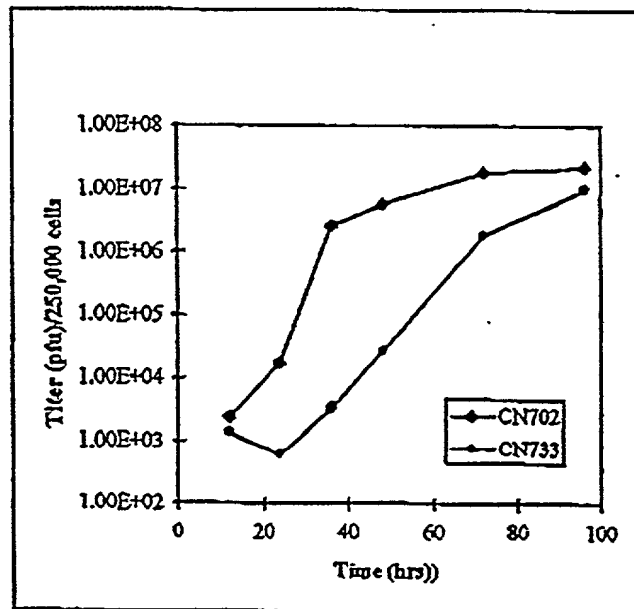
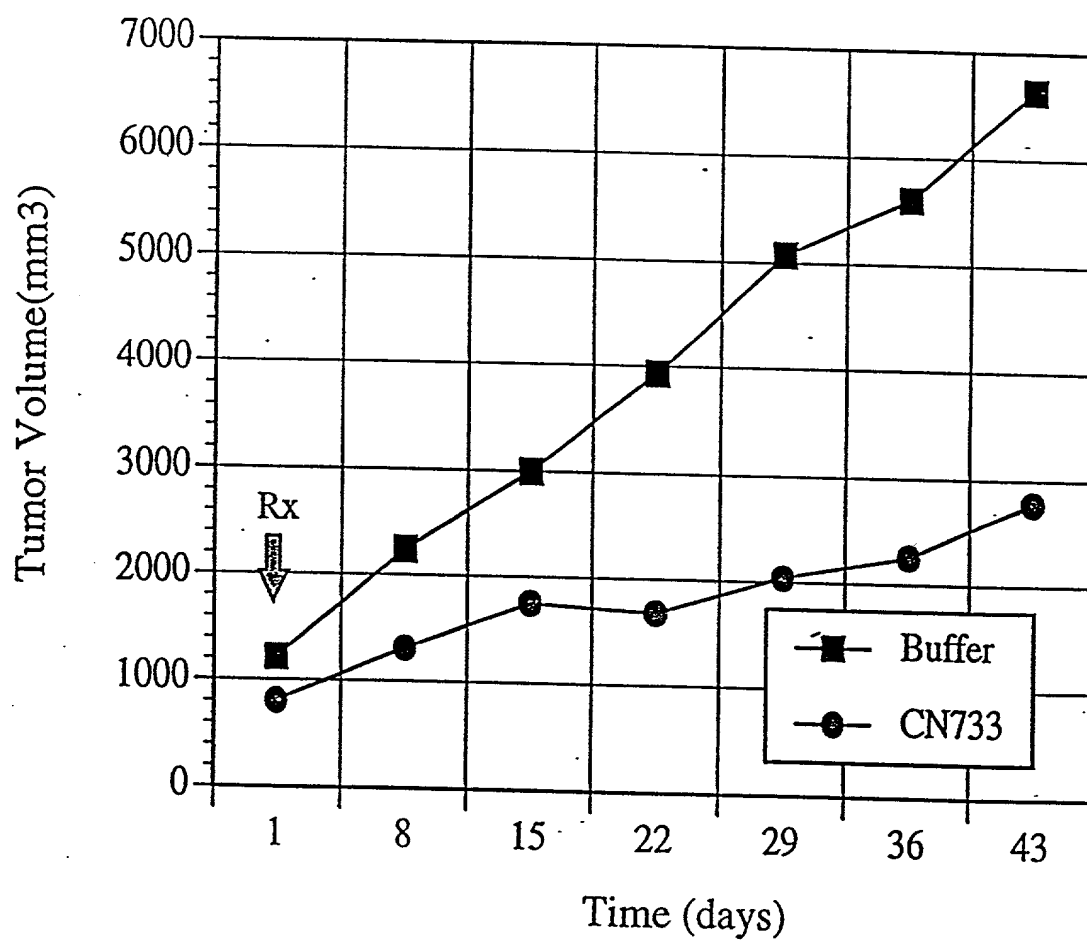
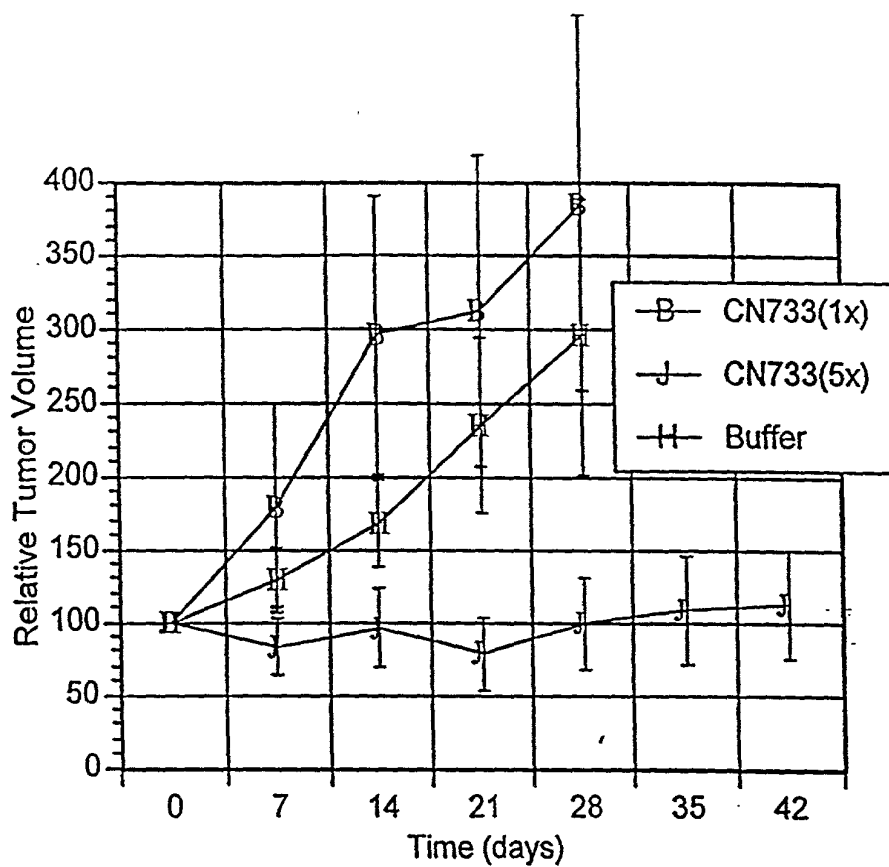


FIGURE 6A



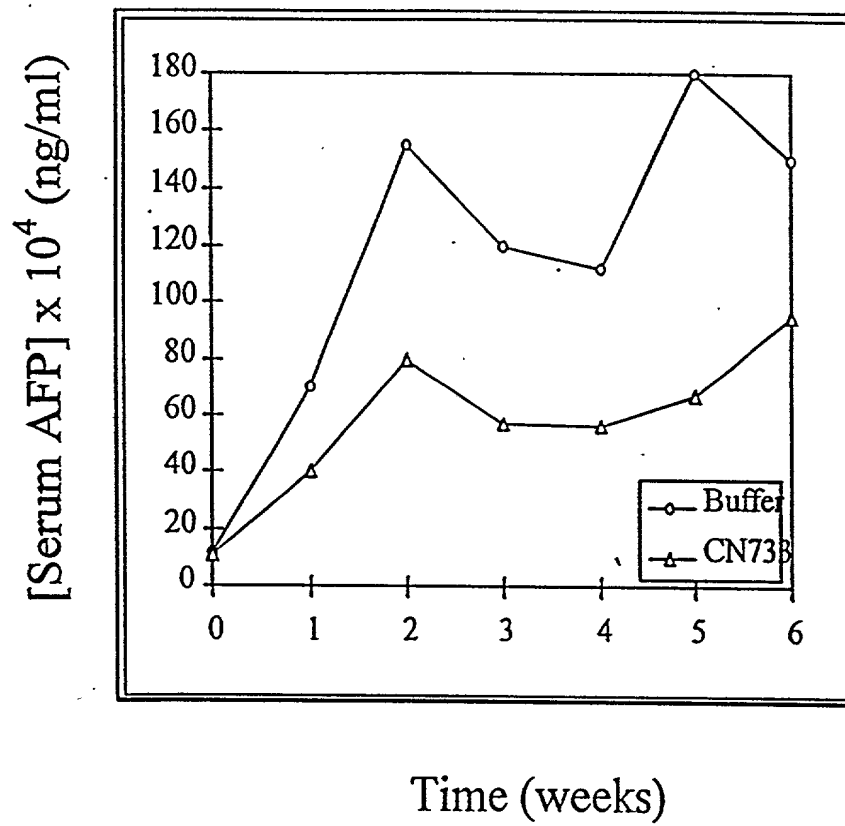
# FIGURE 6B



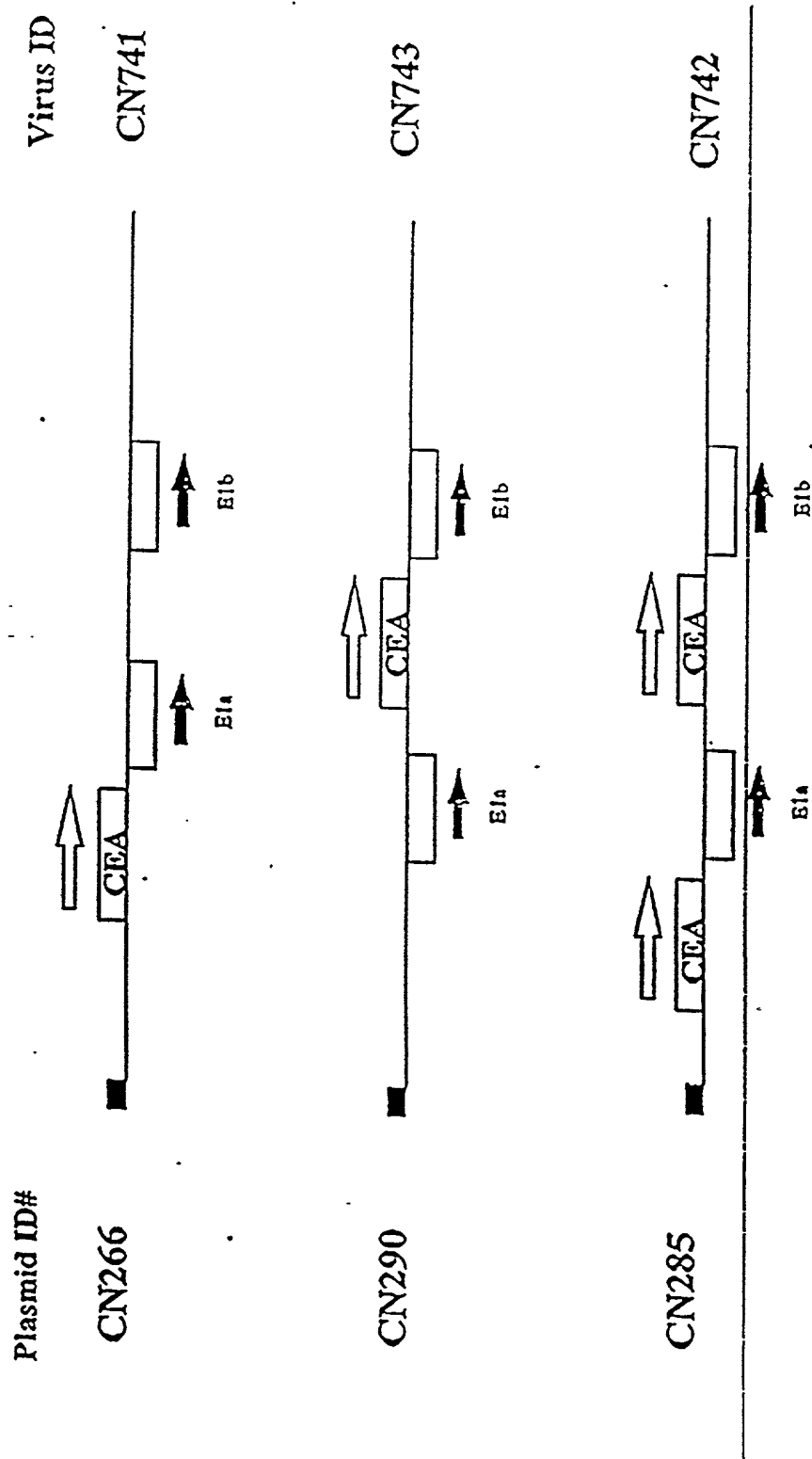
Error bars = standard error

Animals from groups treated with a single dose of CN733 and buffer were sacrificed at 28 days because of excessive tumor burden

**FIGURE 7**



# CEA E1a and E1b Adenovirus Constructs



Plasmid ID#

Virus ID

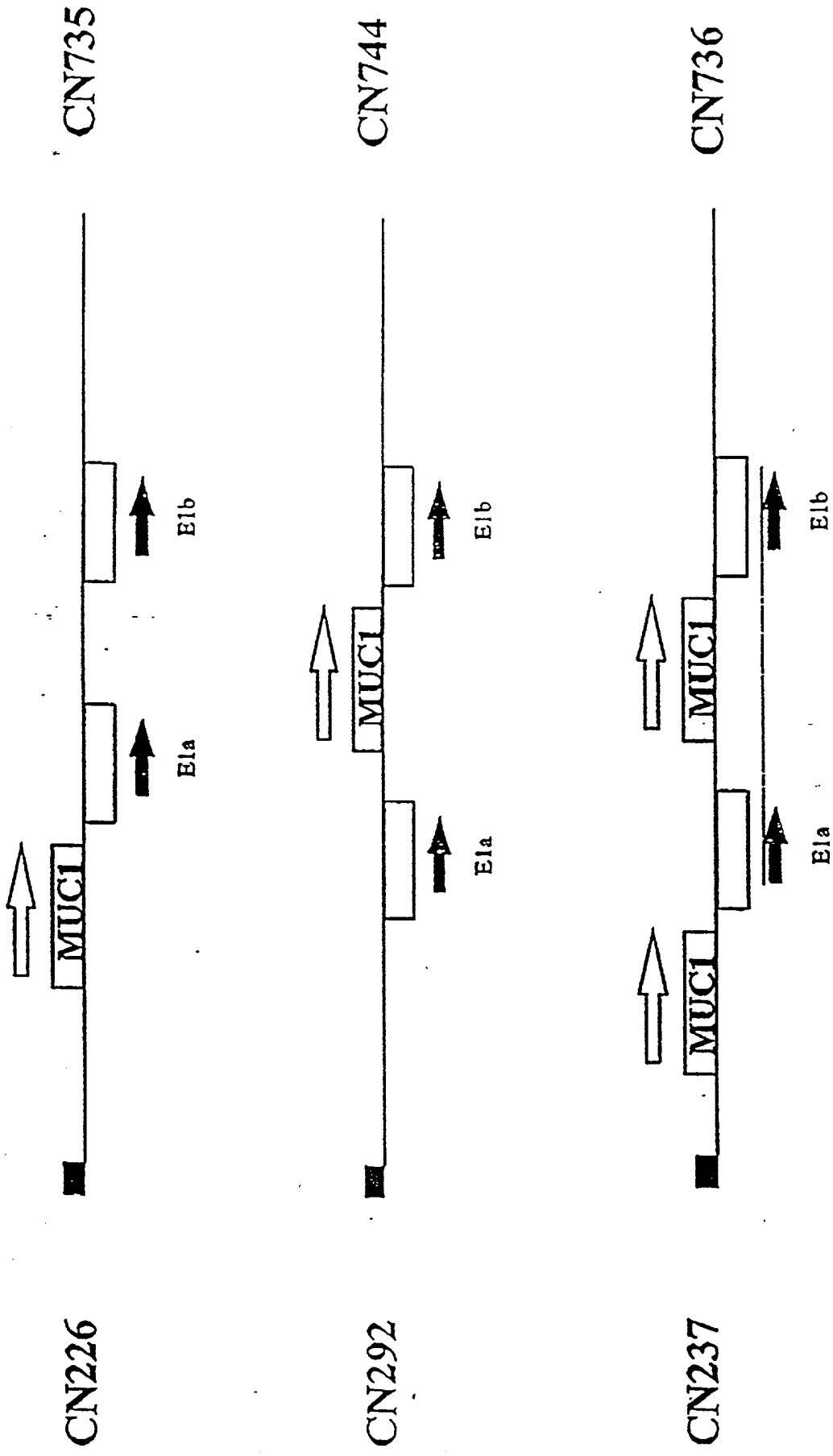


FIGURE 9



-426

5'-AAGCTTCCACAAGTGCATTTAGCCTCTCCAGTATTGCTGATGAATCCACAGT  
TCAGGTTCAATGGCGTTCAAACTTGATCAAAAATGACCAGACTTTATATTCTTA  
CACCAACATCTATCTGATTGGAGGAATGGATAATAGTCATCATGTTTAAACATCT  
ACCATTCCAGTTAAGAAAAATATGATAGCATCTTGTCTTAGICTTTTCTTAATA

ARE-1

GGGACATAAAGCCCAAAATAAAAAATATGCCTGAAGAATGGGACAGGCATGGG  
GCATTGTCCATGCCTAGTAAAGTACTCCAAGAACCTATTGTATACTAGATGACA

ARE-2

CAATGTCAATGTCTGTGTACAACTGCCAACTGGGATGCAAGACACTGCCCATG

CAATCATCCTGAAAAGCAGCTATAAAAAGCAGGAAGCTACTCTGCACATT

CAAT box

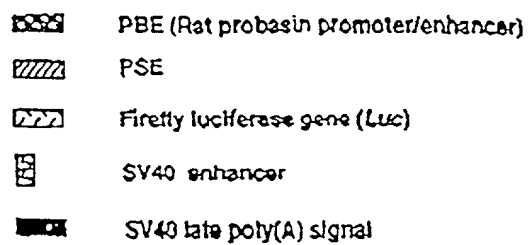
TATAA box

Transcription site

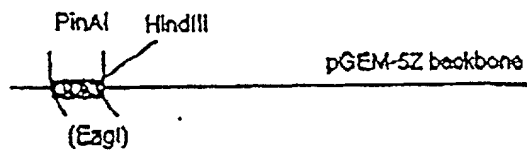
+28

GTCAGTGAGGTCCAGATACCTACAG-3'

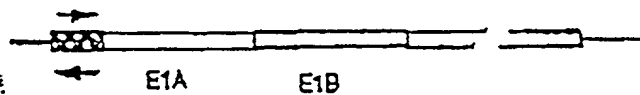
FIGURE 10



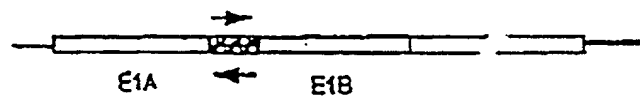
CN249  
 (CN250)  
 CN258  
 CN271



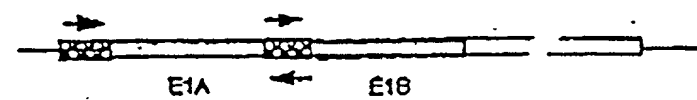
CN251  
 CN253



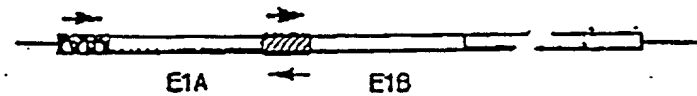
CN254 (CN275)  
 CN255 (CN276)



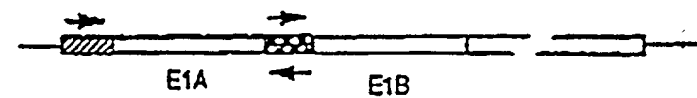
CN268  
 CN269



CN257  
 CN258



CN273  
 CN274



CN280



CN281

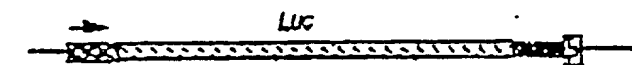


FIGURE 11

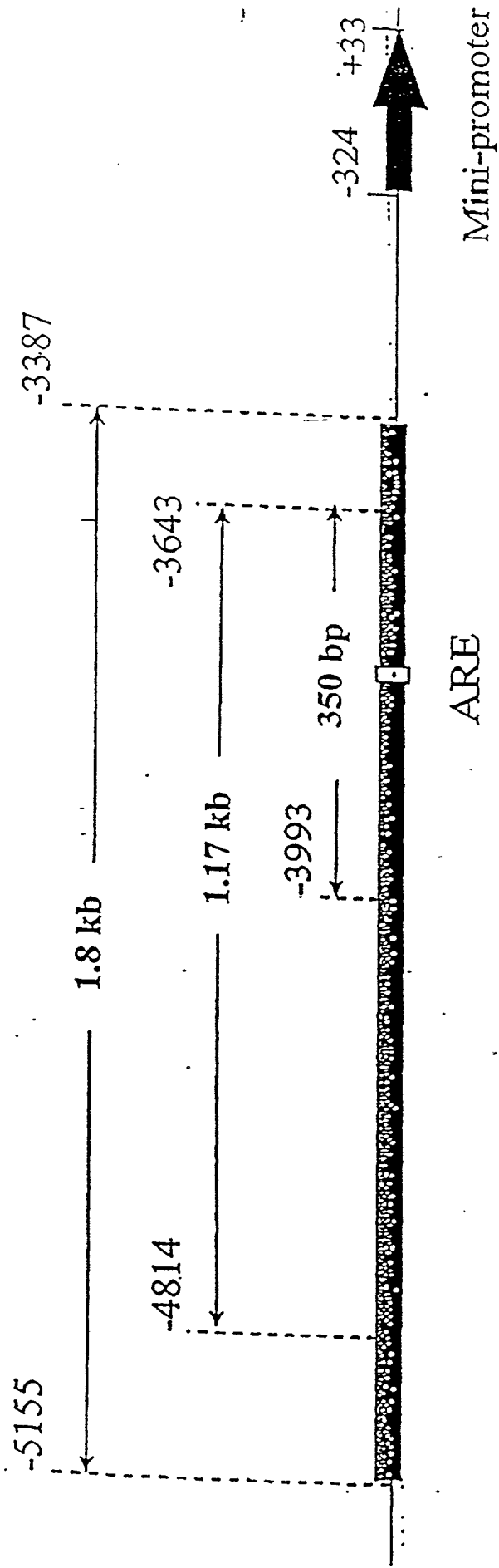


FIGURE 12

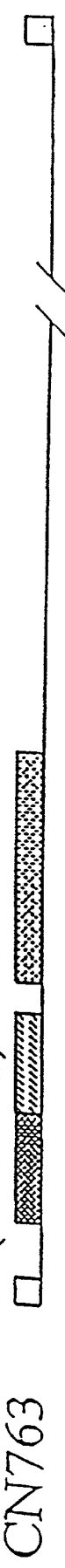
hKLK2 P



E1A E1B



hKLK2  
(1.8 kb E + P)



hKLK2  
(1.17 kb E + P)

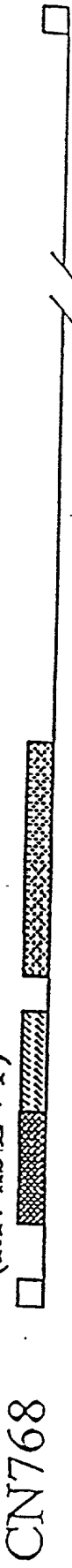


FIGURE 13

# FIGURE 14A

aagcttttta	gtgctttaga	cagtgaactg	gtctgtctaa	cccaagtga	ctgggctcca	60
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cagggctccc	agtggcctga	gaaccattgg	accaggacc	cattacttct	agggtaagga	180
aggtacaaac	accagatcca	accatggtct	ggggggacag	ctgtcaaatg	cctaaaaata	240
tacctgggag	aggagcaggc	aaactatcac	tgccccaggt	tctctgaaca	gaaacagagg	300
ggcaacccaa	agtccaaatc	caggtgagca	ggtgcaccaa	atgccagag	atatgacgag	360
gcaagaagtg	aaggaaccac	ccctgcatca	aatgttttgc	atgggaagga	gaaggggggt	420
gctcatgttc	ccaatccagg	agaatgcatt	tgggatctgc	cttcttctca	ctccttggtt	480
agcaagacta	agcaaccagg	actctggatt	tggggaaaga	cgtttatattg	tggaggccag	540
tgatgacaat	cccacgaggg	cctaggtgaa	gagggcagga	aggctcgaga	cactggggac	600
tgagtgaana	ccacacccat	gatctgcacc	acccatggat	gtccttcat	tgtcacctt	660
tctgttgata	tcagatggcc	ccattttctg	taccttcaca	gaaggacaca	ggctagggtc	720
tgtgcatggc	cttcatcccc	ggggccatgt	gaggacagca	ggtgggaaag	atcatgggtc	780
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ttccctgcat	ctacctttgg	tcattttccc	tcagcaatga	ccagctctgc	ttcctgatct	1020
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ctgataaacc	aggaccatt	acttctaggg	taaggagggt	ccaggagaca	gaagctgagg	1140
aaaggtctga	agaagtcaca	tctgtcctgg	ccagagggga	aaaaccatca	gatgctgaac	1200
caggagaatg	ttgaccacag	aaagggaccg	aggacccaag	aaaggagtca	gaccaccagg	1260
gtttgcctga	gaggaaggat	caaggccccg	agggaaagca	gggctggctg	catgtgcagg	1320
acactgggtg	ggcatatgtg	tcttagattc	tcctgaatt	cagtgtccct	gcatggcca	1380
gactctctac	tcaggcctgg	acatgctgaa	ataggacaat	ggccttgctc	tctctcccca	1440
ccatttgga	agagacataa	aggacattcc	aggacatgcc	ttcctgggag	gtccagggtc	1500
tctgtctcac	acctcaggga	ctgtagttac	tgcatcagcc	atggtaggtg	ctgatctcac	1560
ccagcctgtc	caggcccttc	cactctccac	tttgtgacca	tgtccaggac	caccctcag	1620
atcctgagcc	tgcaataacc	cccttgctgg	gtgggtggat	tcagtaaaca	gtgagctcct	1680

# FIGURE 14B

atccagcccc	cagagcoacc	tctgtcacct	tcctgctggg	catcatccca	ccttcacaag	1740
cactaaagag	catggggaga	cctggctagc	tgggtttctg	catcacaag	aaaataatcc	1800
cccaggttcg	gattcccagg	gctctgtatg	tggagctgac	agacctgagg	ccaggagata	1860
gcagaggtca	gccctagggg	gggtgggtca	tccaccagg	ggacaggggt	gcaccagcct	1920
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cagcagtcag	aggaggccat	ggcagtggt	gagctcctgc	tccaggcccc	aacagaccag	2040
accaacagca	caatgcagtc	cttccccaac	gtcacaggtc	accaaaggga	aactgagggtg	2100
ctacctaac	ttagagccat	caggggagat	aacagcccaa	tttcccaaac	aggccagttt	2160
caatcccatg	acaatgacct	ctctgtcttc	attcttccca	aaataggacg	ctgattctcc	2220
cccaccatgg	atttctccct	tgtcccgga	gccttttctg	ccccctatga	tctgggcact	2280
cctgacacac	acctctcttc	tggtgacata	tcagggtccc	tcactgtcaa	gcagtccaga	2340
aaggacagaa	ccttgagacg	cgcccatctc	agcttcaccc	ttcctccttc	acagggttca	2400
gggcaaagaa	taaattggcag	aggccagtga	gccagagat	ggtgacaggc	agtgaccag	2460
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cggggttcag	atggagaagg	agcaggacag	gggatcccca	ggataggagg	acccagtg	2760
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ttctggggag	tccatgtaaa	gccaggagct	tgtgttgcta	ggaggggtca	tggcatgtgc	2940
tgggggcacc	aaagagagaa	acctgagggc	aggcaggacc	tgtctgagg	aggcatggga	3000
gccagatgg	ggagatggat	gtcaggaaag	gctgccccat	caggagggt	gatagcaatg	3060
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tcacaacctg	gggacactgc	ccatgaaggg	gagcctttgc	ccagccagat	gctgctggtt	3180
ctgcccattc	actacctct	ctgtccagc	cactctgggt	ctttctccag	atgccctgga	3240
cagccctggc	ctgggcctgt	cccctgagag	gtgttgggag	aagctgagtc	tctggggaca	3300
ctctcatcag	agtctgaaag	gcacatcagg	aaacatccct	ggtctccagg	actaggcaat	3360

# FIGURE 14C

gaggaaaggg cccagctcc tccctttgcc actgagaggg tcgaccctgg gtggccacag	3420
tgactttctgc gtctgtccca gtcaccctga aaccacaaca aaaccccagc cccagaccct	3480
gcaggtacaa tacatgtggg gacagtctgt acccagggga agccagttct ctcttcctag	3540
gagaccgggc ctcagggctg tgcccggggc aggcgggggc agcacgtgcc tgtccttgag	3600
aactcgggac ctttaagggtc tctgctctgt gaggcacagc aaggatcctt ctgtccagag	3660
atgaaagcag ctctgcccc tctctgacc tcttctctct tcccaaactc caaccaacaa	3720
ataggtgttt caaatctcat catcaaactc tcatccatcc acatgagaaa gcttaaaacc	3780
caatggattg acaacatcaa gagttggaac aagtggacat ggagatgtta cttgtggaaa	3840
tttagatgtg ttcagctatc gggcaggaga atctgtgtca aattccagca tggttcagaa	3900
gaatcaaaaa gtgtcacagt ccaaagtgc aacagtgcag gggataaaac tgtggtgcat	3960
tcaaactgag ggatattttg gaacatgaga aaggaagggg ttgtgtctgc acagaacatg	4020
gatgatctca cacatagagt tgaaagaaag gagtcaatcg cagaatagaa aatgatcact	4080
aattccacct ctataaagtt tccaagagga aaacccaatt ctgctgctag agatcagaat	4140
ggaggtgacc tgtgccttgc aatggctgtg agggtcacgg gagtgtcact tagtgcaggc	4200
aatgtgccgt atcttaactc gggcagggct ttcattgagca cataggaatg cagacattac	4260
tgctgtgttc attttacttc accggaaaag aagaataaaa tcagccgggc gcggtggctc	4320
acgcctgtaa tcccagcact ttagaaggct gaggtgggca gattacttga ggtcaggagt	4380
tcaagaccac cctggccaat atggtgaaac cccggctcta ctaaaatac aaaaattagc	4440
tgggcatggt ggtgcgcgcc tgtaatccca gctactcggg aggctgaggc tggacaattg	4500
cttggaccca ggaagcagag gttgcagtga gccaagattg tgccactgca ctccagcttg	4560
ggcaacagag ccagactctg taaaaaaaaa aaaaaaaaaa aaaaaaagaa agaaagaaaa	4620
agaaaagaaa gtataaaatc tctttgggtt aacaaaaaaaa gatccacaaa acaaacacca	4680
gctcttatca aacttacaca actctgccag agaacaggaa acacaaatac tcattaactc	4740
acttttgtgg caataaaacc ttcattgtcaa aaggagacca ggacacaatg aggaagtaaa	4800
actgcaggcc ctacttgggt gcagagaggg aaaatccaca aataaaacat taccagaagg	4860
agctaagatt tactgcattg agttcattcc ccaggtatgc aagggtgattt taacacctga	4920
aatcaatca ttgcctttac tacatagaca gattagctag aaaaaaatta caactagcag	4980
aacagaagca atttggcctt cctaaaattc cacatcatat catcatgatg gagacagtgc	5040
agacgccaat gacaataaaa agagggacct ccgtcaccgg gtaaacatgt ccacacagct	5100

# FIGURE 14D

ccagcaagca cccgtcttcc cagtgaatca ctgtaacctc ccctttaatc agccccaggc	5160
aaggctgcct gcgatggcca cacaggetcc aaccogtggg cctcaacctc ccgcagaggc	5220
tctccttttg ccaccccatg gggagagcat gaggacaggg cagagccctc tgatgcccac	5280
acatggcagg agctgacgcc agagccatgg gggctggaga gcagagctgc tggggtcaga	5340
gcttcctgag gacacccagg cctaaggga ggcagctccc tggatggggg caaccaggct	5400
ccgggctcca acctcagagc ccgcatggga ggagccagca ctctaggcct ttcctagggt	5460
gactctgagg ggacctgac acgacaggat cgctgaatgc acccgagatg aaggggccac	5520
cacgggaccc tgctctctg gcagatcagg agagagtggg acaccatgcc agggcccat	5580
ggcatggctg cgactgaccc agggcactcc cctgcatgca tcagcctcgg taagtacat	5640
gaccaagccc aggaccaatg tggaaggaa gaaacagcat cccctttagt gatggaaccc	5700
aaggctcagt caaagagagg ccatgagcag ttaggaaggg tggccaacc tacagcacia	5760
accatcatct atcataagta gaagccctgc tccatgaccc ctgcatttaa ataaacgttt	5820
gttaaagtga tcaaattccc tcccatgag agctcacctg tgtgtaggcc catcacacac	5880
acaaacacac acacacacac acacacacac acacacacac acagggaag tgcaggatcc	5940
tggacagcac caggcaggct tcacaggcag agcaaacagc gtgaatgacc catgcagtgc	6000
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ttccaaattt cgtgccccat tgggtgggac ggaggttgac cgtgacatcc aaggggcatc	6420
tgtgattcca aacttaaact actgtgccta caaaatagga aataacccta ctttttctac	6480
tatctcaaat tccctaagca caagctagca ccctttaaat caggaggttc agtcactcct	6540
ggggtcctcc catgccccca gtctgacttg caggtgcaca ggggtggctga catctgtcct	6600
tgctcctcct cttggctcaa ctgccgcccc tctgggggt gactgatggt caggacaagg	6660
gatcctagag ctggcccat gattgacagg aaggcaggac ttggcctcca ttctgaagac	6720
taggggtgtc aagagagctg ggcacccac agagctgcac aagatgacgc ggacagagg	6780



# FIGURE 14E

tgacacaggg ctcagggctt cagacgggtc gggaggctca gctgagagtt cagggacaga	6840
cctgaggagc ctcagtggga aaagaagcac tgaagtggga agttctggaa tgttctggac	6900
aagcctgagt gctctaagga aatgctccca ccccgatgta gcctgcagca ctggacggtc	6960
tgtgtacctc cccgctgccc atcctctcac agccccgcc tctagggaca caactcctgc	7020
cctaacatgc atctttctctg tctcattcca cacaaaagg cctctggggt cctgttctg	7080
cattgcaagg agtggaggtc acgttccac agaccacca gcaacagggt cctatggagg	7140
tgcggtcagg aggatcacac gtccccat gccaggga ctgactctgg gggatgga	7200
ttggcctgga ggccactgg cccctctgtc cctgaggga atctgcacc tggaggctgc	7260
cacatccctc ctgattctt cagctgagg cccttctga aatcccagg aggactcaac	7320
ccccactggg aaaggcccag tgtggacggt tccacagcag ccagctaag gcccttggac	7380
acagatcctg agtgagagaa cctttagga cacagggtca cggccatgtc ccagtgccc	7440
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ccccaatgac gtgaccctg ggggtggctcc aggtctccag tccatgccac caaaatctcc	7560
agattgaggg tctcccttg agtccctgat gcctgtccag gagctgccc ctgagcaaat	7620
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aaggaggagc atgagctcca ggaaggcgga tggcgtctc tagtgggccc ctctgttaa	7740
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tggagaggac tgaggtgcaa agagggggct gaagtaggg agtggtcggg agagatggga	7860
ggagcaggta aggggaagcc ccaggaggc cgggggaggg tacagcagag ctctccactc	7920
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ttttacttaa tcagcagttt gatgtcccag gagaagatac atttagagtg ttttagagtg	8280
atgccacatg gctgcctgta cctcacagca ggagcagagt gggttttcca aggcctgta	8340
accacaactg gaatgacact cactgggtta cattacaaag tggaatgtgg ggaattctgt	8400
agactttggg aagggaatg tatgacgtga gccacagcc taaggcagtg gacagtcac	8460
tttgaggctc tcaccatcta ggagacatct cagccatgaa catagccaca tctgtcatta	8520

# FIGURE 14F

gaaaacatgt tttattaaga ggaaaaatct aggctagaag tgctttatgc tcttttttct	8580
ctttatgttc aaattcatat acttttagat cattccttaa agaagaatct atccccctaa	8640
gtaaatgtta tcaactgactg gatagtgttg gtgtctcact cccaaccctt gtgtggtgac	8700
agtgccctgc ttccccagcc ctgggcccctc tctgattcct gagagctttg ggtgctcctt	8760
cattaggagg aagagaggaa ggggtgtttt aatattctca ccattcaccc atccacctct	8820
tagacactgg gaagaatcag ttgcccactc ttggatttga tctctgaatt aatgacctct	8880
atttctgtcc cttgtccatt tcaacaatgt gacaggccta agaggtgcct tctccatgtg	8940
atttttgagg agaaggttct caagataagt tttctcacac ctctttgaat tacctccacc	9000
tgtgtcccca tcaccattac cagcagcatt tggacccttt ttctgttagt cagatgcttt	9060
ccacctcttg aggggtgtata ctgtatgctc tctacacagg aatatgcaga ggaaatagaa	9120
aaagggaaat cgcattacta ttcagagaga agaagacctt tatgtgaatg aatgagagtc	9180
taaaatccta agagagccca tataaaatta ttaccagtgc taaaactaca aaagttacac	9240
taacagtaaa ctagaataat aaaacatgca tcacagttgc tggtaaagct aaatcagata	9300
tttttttctt agaaaaagca ttccatgtgt gttgcagtga tgacaggagt gcccttcagt	9360
caatatgctg cctgtaattt ttgttccctg gcagaatgta ttgtcttttc tccctttaa	9420
tcttaaattgc aaaactaaag gcagctcctg ggccccctcc ccaaagtcag ctgcctgcaa	9480
ccagccccac gaagagcaga ggccctgagct tccctgggtca aaataggggg ctagggagct	9540
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ctggaggggtg gtgagcctca ctggtggcct gatgcttacc ttgtgccctc acaccagtgg	9660
tcaactggaac cttgaacact tggctgtcgc ccgatctgc agatgtcaag aacttctgga	9720
agtcaaatta ctgccactt ctccagggca gatacctgtg aacatccaaa accatgccac	9780
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agcgaggctt ggaggtgctt cgccacaagg cagccccaat ttgctgggag tttcttgga	9960
cctggtagtg gtgaggagcc ttgggaccct caggattact ccccttaagc atagtggga	10020
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agaccctgc accaatgaga ccatgctgaa gcctcagaga gagagatgga gctttgacca	10140
ggagccgctc ttccttgagg gccagggcag ggaaagcagg aggcagcacc aggagtggga	10200

# FIGURE 14G

acaccagtgt ctaagcccct gatgagaaca ggggtggtctc tcccatatgc ccataaccagg	10260
cctgtgaaca gaatcctcct tctgcagtga caatgtctga gaggacgaca tgtttccag	10320
cctaacgtgc agccatgccc atctaccacac tgcctactgc aggacagcac caaccaggga	10380
gctgggaagc tgggagaaga catggaatac ccatggcttc tcaccttctt ccagtcaggt	10440
gggcaccatt tatgcctagg acaccacact gccggcccca ggctcttaag agttaggtca	10500
cctaggtgcc tctgggaggc cgaggcagga gaattgcttg aaccggggag gcagagggtg	10560
cagtgaagcg agatcacacc actgcactcc agcctgggtg acagaatgag actctgtctc	10620
aaaaaaaaag agaaagatag catcagtggc taccaagggc taggggcagg ggaaggtgga	10680
gagttaatga ttaatagtat gaagtttcta tgtgagatga tgaaaatgtt ctggaaaaaa	10740
aaatatagtg gtgaggatgt agaataattgt gaatataatt aacggcattt aattgtacac	10800
ttaacatgat taatgtggca tattttatct tatgtatttg actacatcca agaaacactg	10860
ggagagggaa agcccaccat gtaaaataca cccaccctaa tcagatagtc ctcatgtac	10920
ccaggtacag gcccctcatg acctgcacag gaataactaa ggattttaagg acatgaggct	10980
tcccagccaa ctgcaggtgc acaacataaa tgtatctgca aacagactga gagtaaagct	11040
gggggcacaa acctcagcac tgccaggaca cacacccttc tcgtggattc tgactttatc	11100
tgaccgggcc cactgtccag atcttgttgt gggattggga caaggagggt cataaagcct	11160
gtccccaggg cactctgtgt gagcacacga gacctccca cccccacc gttaggtctc	11220
cacacataga tctgaccatt aggcattgtg aggaggactc tagcgcgggc tcagggatca	11280
caccagagaa tcaggtacag agaggaagac ggggctcgag gagctgatgg atgacacaga	11340
gcagggttcc tgcagtccac aggtccagct caccctggtg taggtgcccc atccccctga	11400
tccaggcatc cctgacacag ctccctcccg gagcctctc ccaggtgaca catcagggtc	11460
cctcactcaa gctgtccaga gagggcagca ccttggacag cgcccacccc acttcactct	11520
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agaggaggac acaggctctg tggggctgca gcccaggatg ggactaagtg tgaagacatc	11760
tcagcaggtg aggccaggtc ccatgaacag agaagcagct cccacctccc ctgatgcagc	11820
gacacacaga gtgtgtggtg ctgtgcccc agagtggggc tctctgttc tgggtccccag	11880
ggagtgaaga gtgagggtga cttgtccctg ctctctctg ctaccccaac attcaccttc	11940

# FIGURE 14H

tctcatgcc cctctctctc aaatatgatt tggatctatg tccccgcca aatctcatgt	12000
caaattgtaa accccaatgt tggaggtggg gccttgtag aagtgattgg ataatgcggg	12060
tggattttct gctttgatgc tgtttctgtg atagagatct cacatgatct ggttgtttaa	12120
aagtgtgtag cacctctccc ctctctctct ctctctctta ctcatgctct gccatgtaag	12180
acgttctgtt ttcccttca cgtccagaa tgattgtaag tttctgagg cctccccagg	12240
agcagaagcc actatgcttc ctgtacaact gcagaatgat gagcgaatta aacctctttt	12300
ctttataaat taccagttct caggtatttc tttatagcaa tgcgaggaca gactaataca	12360
atcttctact ccagatccc cgcacacgct tagccccaga catcactgcc cctgggagca	12420
tgcacagcgc agcctcctgc cgacaaaagc aaagtcacaa aaggtgacaa aaatctgcat	12480
ttggggacat ctgattgtga aagagggagg acagtacact tgtagccaca gagactgggg	12540
ctcaccgagc tgaaacctgg tagcactttg gcataacatg tgcattgccc gtgttcaatg	12600
tctagagatc agtgttgagt aaaacagcct ggtctggggc cgctgctgtc cccacttccc	12660
tctgtccac cagagggcgg cagagttcct cccaccctgg agcctcccca ggggtgctg	12720
acctccctca gccgggcca cagcccagca gggtcacccc tcaccgggt cacctcgcc	12780
cacgtcctcc tcgccctccg agctcctcac acggactctg tcagctcctc cctgcagcct	12840
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gcgcctgtct cccggttaca ggaaaactct gtgacaggga ccacgtctgt cctgctctct	13140
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taaatgtgtg ggagatctct aaaaagaagc atatcacctc cgtgtggccc ccagcagtca	13260
gagtctgttc catgtggaca caggggcact ggcaccagca tgggaggagg ccagcaagtg	13320
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cctcttgccc tcagggggt gacattgcac acagacatca ctcaggaaac ggattcccc	13560
ggacaggaac ctggctttgc taaggaagtg gaggtggagc ctggtttcca tcccttgctc	13620

# FIGURE 14I

caacagaccc ttctgatctc tcccacatac ctgctctgtt cttttctggg tcctatgagg	13680
accctgttct gccaggggtc cctgtgcaac tccagactcc ctctgtgtac caccatgggg	13740
aaggtggggt gatcacagga cagtcagcct cgcagagaca gagaccaccc aggactgtca	13800
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cccctggagc cttccccaag gacagcagag cccagagtca cccacctccc tccaccacag	13920
tcctctcttt ccaggacaca caagacacct cccctccac atgcaggatc tggggactcc	13980
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acagagggct ggtccctccc cagccaccac ccagttagcc tttttctagc cccagagcc	14100
acctctgtca ccttctgtt gggcatcatc ccacctccc agagccctgg agagcatggg	14160
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ggatgggggt ccatccacct tgccgaaaag atttgtctga ggaactgaaa atagaaggga	14340
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agggcagagg gaggaaggac agcagaccag acagtcacag cagccttgac aaaacgttcc	14520
tggaaactcaa gctcttctcc acagaggagg acagagcaga cagcagagac catggagtct	14580
ccctcggccc ctccccacag atggtgcac cctggcaga ggctcctgct cacaggtgaa	14640
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gacaggagtc acaccagaaa aatcaaattg aactggaatt ggaaaggggc aggaaaacct	14820
caagagttct attttcctag ttaattgtca ctggccacta cgtttttaaa aatcataata	14880
actgcatcag atgacacttt aaataaaaac ataaccaggg catgaaacac tgtcctcatc	14940
cgcctaccgc ggacattgga aaataagccc caggctgtgg agggccctgg gaaccctcat	15000
gaactcatcc acaggaatct gcagcctgtc ccaggcactg gggtgcaacc aagatc	15056

# FIGURE 15A

aagcttctag ttttcttttc ccggtgacat cgtggaaagc actagcatct ctaagcaatg 60  
 atctgtgaca atattcacag tgtaatgcca tccagggaaac tcaactgagc cttgatgtcc 120  
 agagattttt gtgttttttt ctgagactga gtctcgctct gtgccaggct ggagtgcagt 180  
 ggtgcaacct tggctcactg caagctccgc ctctggggtt cagccattc tctgcctca 240  
 gcctcctgag tagctgggac tacaggcacc cgccaccacg cctggctaata ttttttgtat 300  
 ttttagtaga gatgggggtt cactgtgtta gccaggatgg tctcagtctc ctgacctcgt 360  
 gatctgcccc ccttggcctc ccaaagtgtc gggatgacag gcgtgagcca ccgcgcctgg 420  
 ccgatatcca gagatttttt ggggggctcc atcacacaga catgttgact gtcttcatgg 480  
 ttgactttta gtatccagcc cctctagaaa tctagctgat atagtgtggc tcaaaaactt 540  
 gagcacaaat cacaccgtta gactatctgg tgtggcccaa accttcaggt gaacaaaggg 600  
 actctaattc ggcaggatat tccaaagcat tagagatgac ctcttgcaaa gaaaaagaaa 660  
 tggaaaagaa aaagaaagaa agggaaaaaa aaaaaaaaaa gagatgacct ctcaggctct 720  
 gaggggaaac gcctgaggtc tttgagcaag gtcagtcctc tgttgacacag tctccctcac 780  
 agggtcattg tgacgatcaa atgtggtcac gtgtatgagg caccagcaca tgccctggctc 840  
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 ctggcctcat ttgatggaga aagtggctgt ggctcagaaa ggggggacca ctagaccagg 1020  
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 cttgaccctc tcttttaggg ctctttctga cctccaccat ggtactagga cccattgta 1200  
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 agcagacagc atgaggttca tgttcacatt agtacacctt gccccccca aatctttag 1500  
 ggtgaccaga gcagtctagg tggatgctgt gcagaagggg tttgtgccac tggtgagaaa 1560  
 cctgagatta ggaatcctca atcttatact gggacaactt gcaaactgc tcagcctttg 1620  
 tctctgatga agatattatc ttcatgatct tggattgaaa acagacctac tctggaggaa 1680

## FIGURE 15B

catattgtat cgattgtcct tgacagtaaa caaatctgtt gtaagagaca ttatctttat 1740  
tatctaggac agtaagcaag cctggatctg agagagatat catcttgcaa ggatgcctgc 1800  
tttacaaca tccttgaaac aacaatccag aaaaaaaaaag gtgttgctgt ctttgctcag 1860  
aagacacaca gatacgtgac agaaccatgg agaattgcct cccaacgctg ttcagccaga 1920  
gccttcacc cttgtctgca ggacagtctc aacgttccac cattaataac ttcttctatc 1980  
acatcctgct tctttatgcc taaccaaggt tctagggtccc gatcgactgt gtctggcagc 2040  
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atcagattgg agttgggtta gataaagtgc tgggtatagg attgagagtg gagtatgaag 3240  
accagttagg atggaggatc agattggagt tgggttagag atggggtaaa attgtgctcc 3300  
ggatgagttt gggattgaca ctgtggaggt ggtttgggat ggcatggctt tgggatggaa 3360

# FIGURE 15C

atagatttgt tttgatgttg gctcagacat ccttggggat tgaactgggg atgaagctgg 3420  
 gtttgatttt ggaggtagaa gacgtggaag tagctgtcag atttgacagt ggccatgagt 3480  
 tttgtttgat ggggaatcaa acaatggggg aagacataag gggttggttg ttaggttaag 3540  
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 ttgggttggg tcaggttttg gttgaggatg agttgaggat atgcttgggg acaccggatc 3660  
 catgagggtc tctactggagt ggagacaaac ttcctttcca ggatgaatcc aggggaagcct 3720  
 taattcacgt gtaggggagg tcaggccact ggctaagtat atccttcac tccagctcta 3780  
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 cagcctccca aagtgtctggg attacaggcg tcagccaccg cgcccagcca cttttgtcaa 4200  
 attcttgaga cacagctcgg gctggatcaa gtgagctact ctggttttat tgaacagctg 4260  
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 tggttggcct tgaactcctg gcttcaagtg atcctcctac cttggcctcg gaaagtgttg 4980  
 ggattacagg cgtgagccac catgactgac ctgtcgtaa tcttgaggta cataaacctg 5040  
 gctcctaaag gctaaaggct aaatatttgt tggagaaggg gcattggatt ttgcatgagg 5100



## FIGURE 15D

atgattctga cctgggaggg caggtcagca ggcattctctg ttgcacagat agagtgtaca 5160  
ggtctggaga acaaggagtg gggggttatt ggaattccac attgtttgct gcacgttgga 5220  
ttttgaaatg ctagggaact ttgggagact catatttctg ggctagagga tctgtggacc 5280  
acaagatctt tttatgatga cagtagcaat gtatctgtgg agctggattc tgggttgga 5340  
gtgcaaggaa aagaatgtac taaatgccaa gacatctatt tcaggagcat gaggaataaa 5400  
agttctagtt tctggtctca gagtgggtgca gggatcaggg agtctcaca tctcctgagt 5460  
gctggtgtct tagggcacac tgggtcttgg agtgcaaagg atctaggcac gtgaggcttt 5520  
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tgggaggggg ttgtccagcc tccagcagca tggggagggc cttggtcagc ctctgggtgc 5760  
cagcagggca ggggcggagt cctggggaat gaaggtttta tagggctcct gggggaggct 5820  
ccccagcccc aagctt 5836

# FIGURE 16A

gaattcagaa ataggggaag gttgaggaag gacactgaac tcaaagggga tacagtgatt 60  
 ggtttatttg tcttctcttc acaacattgg tgctggagga attcccaccc tgaggttatg 120  
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 agagggcagg gtgaactctg attcccatgg gggaatgtga tggctctgtt acaaattttt 360  
 caagctggca gggaataaaa cccattacgg tgaggacctg tggagggcgg ctgccccaac 420  
 tgataaagga aatagccagg tgggggcctt tccattgtga ggggggacat atctggcaat 480  
 agaagccttt gagacccttt aggttacaag tactgaggca gcaaataaaa tgaaatctta 540  
 tttttcaact ttatactgca tgggtgtgaa gatataattg tttctgtaca gggggtgagg 600  
 gaaaggaggg gaggaggaaa gttcctgcag gtctggtttg gtcttgtgat ccaggggggtc 660  
 ttggaactat ttaaattaaa ttaaattaaa acaagcgact gttttaaatt aaattaaatt 720  
 aaattaaatt ttactttatt ttatcttaag ttctgggcta catgtgcagg acgtgcagct 780  
 ttgttacata ggtaaactgt tgccatggtg gtttgctgta cctatcaacc catcacctag 840  
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 cccacttata agtgagaaca tgtggtgttt ggttttctgt ttctgtgtta gtttgctgag 1020  
 gataatggct tccacctcca tccatgttcc tgcaaaggac gtgatcttat tcttttttat 1080  
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 taattagcat actagaagag attacagaag atattaggta cattgaatga ggaaatatat 1200  
 aaaataggac gaaggtgaaa tattaggtag gaaaagtata atagttgaaa gaagtaaaaa 1260  
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 aaggattcat accgtgccat tgaagaggaa gatggaaaag ccaagaagcc agatgaaagt 1560  
 tagaaatatt attggcaaag cttaaattgt aaaagtccta gagagaaagg atggcagaaa 1620  
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# FIGURE 16B

gcagctgtag ccttttctag ataatacact attgtcatat atcgcttaag cgagtgtaaa 1740  
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gtctcctagg ctggagtgca atagtgcgat accactcact gcaacctctg cctcctctgt 1860  
tcaagtgatt ttcttacctc agcctccoga gtagctggga ttacaggtgc gtgccaccac 1920  
acccggctaa tttttgtatt tttttagag acggggtttt gccatgttgg ccaggctggt 1980  
cttgaactcc tgacatcagg tgatccacct gccttggcct cctaaagtgc tgggattaca 2040  
ggcatgagcc accgtgccca accactttat ttatTTTTTTA tttttatTTT taaatttcag 2100  
cttctatTTT aaatacaggg ggcacatata taggattggt acatgggtat attgaactca 2160  
ggtagtgatc atactacca acaggtaggt tttcaacca ctccccctct tttcctcccc 2220  
attctagtag tgtgcagtgt ctattgttct catgtttatg totatgtgtg ctccaggttt 2280  
agctcccacc tgtaagtgag aacgtgtggt atttgatttt ctgtccctgt gtttaattcac 2340  
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cggagtcttg ctttgctgcc taggctggag tgcagtagca cgatctcggc tcaactgcaag 2520  
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caccctgaca gggcaaacag acaacctaca gaatgggagg aaatttttgc aatctattca 3300  
tctgacaaag gtcaagaata tccagaatct acaaggaact taagcaaatt tttacttttt 3360

# FIGURE 16C

aataatagcc actctgactg gcgtgaaatg gtatctcatt gtggttttca tttgaatttc 3420  
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tcttccattc tgtaggttgt ctgtttactc tattgatggc ttcttttgct gtgccgaagc 3660  
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tcatatgcaa tccactgggc tcgatctgct tcaaattgct gatgcactgc tgctaaagct 4980  
atacatttaa aaccctcact aaaggatcag ggaccatcat ggaagaggag gaaacatgaa 5040  
attgtaagag ccagattcgg ggggtagagt gtggaggcca gagcaactcc accttgaata 5100

## FIGURE 16D

agaaggtaaa gcaacctatc ctgaaagcta acctgccatg gtggcttctg attaacctct 5160  
gttctaggaa gactgacagt ttgggtctgt gtcattgccc aaatctcatg ttaaattgta 5220  
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gctttgcctt ctaccataag taaaagcccc ctgaggcctc ccagaagca gatgccacca 5460  
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# FIGURE 16E

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## FIGURE 16F

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# FIGURE 16G

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# FIGURE 16H

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12000 12001 12002 12003 12004 12005 12006 12007 12008 12009 12010 12011 12012 12013 12014 12015 12016 12017 12018 12019 12020 12021 12022 12023 12024 12025 12026 12027 12028 12029 12030 12031 12032 12033 12034 12035 12036 12037 12038 12039 12040 12041 12042 12043 12044 12045 12046 12047

# FIGURE 17

cgagcggccc ctcagcttcg gcgcccagcc ccgcaaggct cccggtgacc actagagggc 60  
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### FIGURE 18

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tgcaagacac tgcccatgcc aatcatcctg aaaagcagct ataaaaagca ggaagctact 420
ctgcaccttg tcagtgaggt ccagatacct acag 454
```

g atg acc ggc tca acc atc gcg ccc aca acg gac tat cgc aac acc act	49
Met Thr Gly Ser Thr Ile Ala Pro Thr Thr Asp Tyr Arg Asn Thr Thr	
1 5 10 15	
gct acc gga cta aca tct gcc cta aat tta ccc caa gtt cat gcc ttt	97
Ala Thr Gly Leu Thr Ser Ala Leu Asn Leu Pro Gln Val His Ala Phe	
20 25 30	
gtc aat gac tgg gcg agc ttg gac atg tgg tgg ttt tcc ata gcg ctt	145
Val Asn Asp Trp Ala Ser Leu Asp Met Trp Trp Phe Ser Ile Ala Leu	
35 40 45	
atg ttt gtt tgc ctt att att atg tgg ctt att tgt tgc cta aag cgc	193
Met Phe Val Cys Leu Ile Ile Met Trp Leu Ile Cys Cys Leu Lys Arg	
50 55 60	
aga cgc gcc aga ccc ccc atc tat agg cct atc att gtg ctc aac cca	241
Arg Arg Ala Arg Pro Pro Ile Tyr Arg Pro Ile Ile Val Leu Asn Pro	
65 70 75 80	
cac aat gaa aaa att cat aga ttg gac ggt ctg aaa cca tgt tct ctt	289
His Asn Glu Lys Ile His Arg Leu Asp Gly Leu Lys Pro Cys Ser Leu	
85 90 95	
ctt tta cag tat gat taa	307
Leu Leu Gln Tyr Asp	
100	

**FIGURE 19**